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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,891	06/03/2002	Ilkka Kojo	6009-4615	6091

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Morgan & Finnegan
Suite 400
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Washington, DC 20006

EXAMINER

ANDREWS, MELVYN J

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,891

Applicant(s)

KOJO ET AL.

Examiner

Melvyn J. Andrews

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

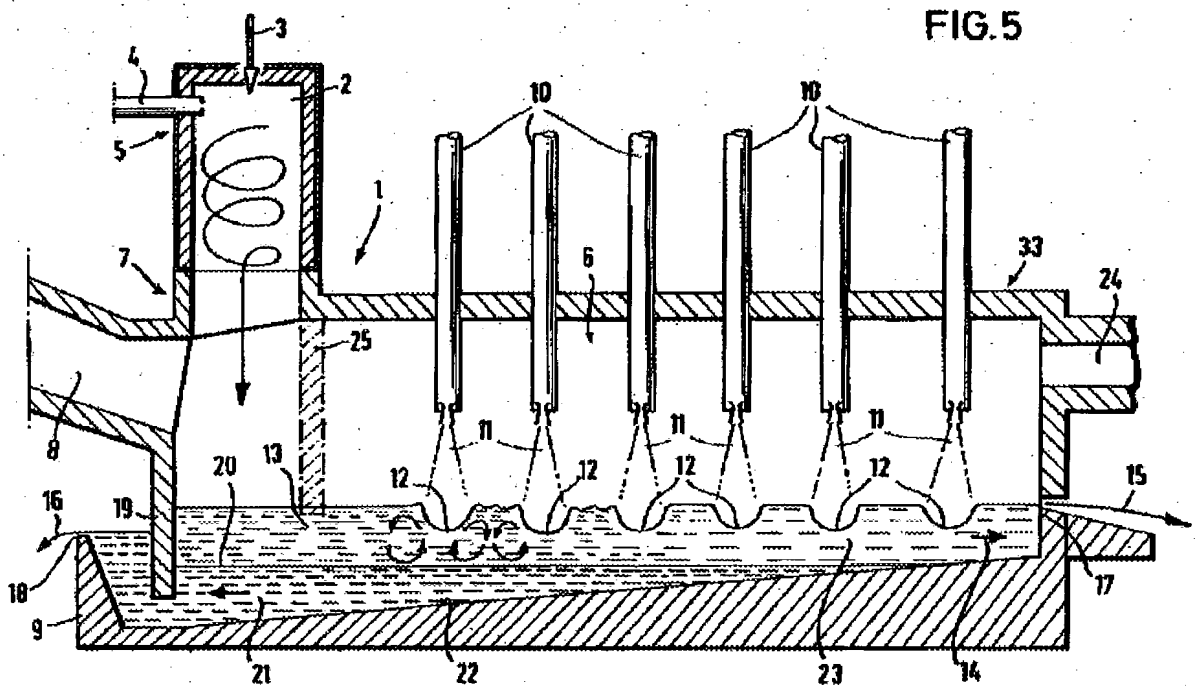
Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 to 3, 5, 6, 7 and 9 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melcher (US 4,283,045). Melcher discloses a method and apparatus for the continuous recovery of tin which is a non-ferrous metal in an apparatus which includes a partition wall extending into the molten liquid in a furnace tank 9 with a floor level or base 22 which has a decided inclination to the cyclone part as shown in FIG.5



but does not disclose a method characterized in that the slag is reduced in a throttle point and equipment characterized in that a lower furnace is furnished with a throttle point but Melcher discloses element 25 a partition wall as well as a floor level or base 22 and further discloses "In order to make the kinetic reaction system as effective as possible in the area of the liquid and gaseous phases, the depth of the smelt decreases in the direction of flow of the slag." (col.2, lines 62 to 65) which is the equivalent to providing a throttle point the motivation being to make the reaction system as effective as possible. Melcher disclose the entire melt flowing below the partition wall as in Claim 2; the area below the partition is equivalent to the claimed "reduction point" in Claim 3; and the slag flow 14 is provided with an area before the overflow weirs 17 equivalent to the "settling area (7)" of Claim 5.

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Melcher discloses a system of water cooled lances 10 which are equivalent to "tuyeres (6)" of Claim 6. With respect to Claim 7 an area equivalent to the claimed "throttle point" is located between a cyclone 2 and exhaust gas may be withdrawn on the opposite side 33 of the reactor 1, which are equivalent to the claimed reaction shaft and uptake. With respect to Claims 9 and 10 Melcher discloses the slag flow 14 is provided with an area before the overflow weirs 17 equivalent to the "settling area (7)" and "slag-tapping hole"

With respect to Claims 4 and 8 Melcher et al discloses a gas channel 8 and channel 24 (col.9, lines 28 to 32) located at both ends of the reactor the "gas channel 8 is located before area in the reactor 1 equivalent to the claimed "throttle point (5)".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 to 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 to 12 are indefinite because the expression "throttle point(5)" is indefinite because its structure and its function is not clearly claimed ; also, how does it differ from "the reduction point " of Claims 4. Claim 1 is indefinite because the expression "the slag is reduced" in Claim 1 is indefinite since the expression "reduced" is not defined for example is it a chemical reaction ? Claim 2 is indefinite because the expression "entire melt " is not defined. Claim 3 is indefinite because there is no antecedent basis for "the

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reduction point". Claim 4 is indefinite because the expression "reduction point" is indefinite where is it shown and how does it differ from "throttle point (5)" is unclear.

Claim 6 is indefinite because the expression "lower furnace" is indefinite because its structural relationship to "Equipment" is not set forth.

Claim 7 is indefinite because "is formed to an area of the lower furnace" is indefinite and there is no antecedent basis for "the reaction shaft and the uptake"

Claim 8 is indefinite because there is no antecedent basis for "an area of the lower furnace after the uptake" and the expression "is formed to an area" is indefinite.

Claim 10 there is no antecedent basis for "the slag-tapping hole".

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yannopoulos (US 4,470,845) and Hanniala (US 4,645,186) disclose apparatuses for treating sulphides including partitions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvyn J. Andrews whose telephone number is (571)272-1239. The examiner can normally be reached on 8:00A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on (571)272-1244. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Melvyn Andrews

**MELVYN ANDREWS
PRIMARY EXAMINER**

mja
January 21, 2004